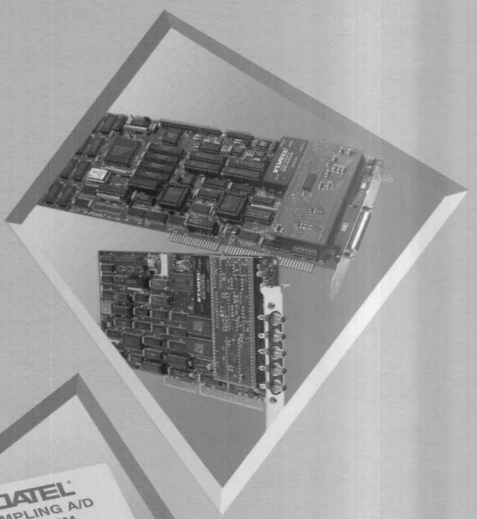
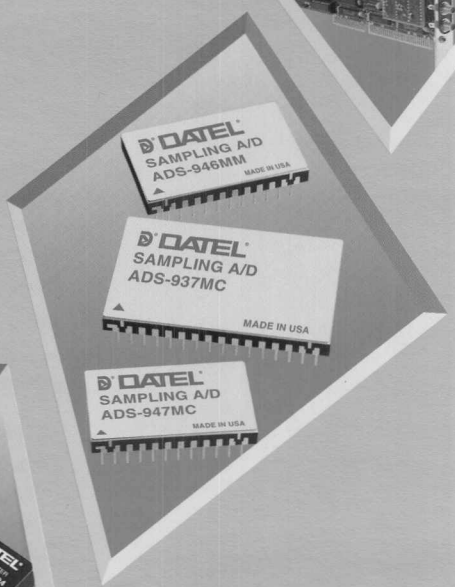
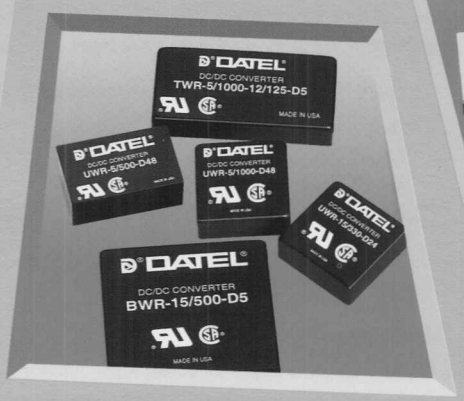
DATEL®

NEW PRODUCTS

DC/DC Converters
Digital Panel Voltmeters
Data Acquisition Boards
Sampling A/D Converters







ISO 9001 Registered
MIL-STD-1772 Certified

New Products from DATEL

Founded in 1970, today's DATEL is an international electronics manufacturing company maintaining performance and quality leadership in all four of its core product lines. All our products are proudly designed and manufactured in our modern, highly automated, 180,000 square-foot facility in Mansfield, Massachusetts (USA).

Committed to
Continuous Improvement

ISO 9001
REGISTERED

MIL-STD-1772 Certified

Contents

New Fax-On-Demand Document Delivery System

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Data Sheets . . . Catalogs . . . Prices . . . Ap Notes . . . Sales Offices . . . More!

If you have a touch-tone phone and a nearby fax machine, you can order the DATEL documents you need and have them delivered instantly. Simply dial the DATELfacts® phone number, follow the prompts, and the document you request will arrive at your fax machine within minutes. If you don't know the document fax code, ask the system to send you an index. It's that simple.

Convenience

DATEL has direct sales offices in the United States (Mansfield, MA), Germany (Munich), France (Montigny Le Bretonneux), England (Tadley) and Japan (Tokyo and Osaka). We employ an extensive network of field sales representatives throughout the USA, Canada, Europe, the Far East and other areas around the world.

In the USA, dial **800-233-2765** to immediately receive literature, price and delivery information, or applications assistance. Our Email addresses for requesting literature or entering orders are, respectively, **datellit@mcimail.com** and **datelorder@mcimail.com**.

There are four ways in which to purchase DATEL products:

- C.O.D.
- VISA or Mastercard
- Bank check or money order
- Open an account with established credit

Most products are available, in small quantities, from stock and can be shipped within 24 hours.

Applications Assistance

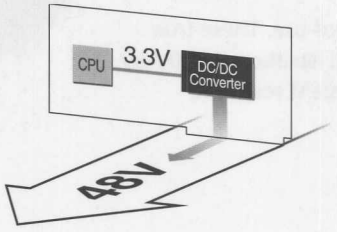
DATEL employs a large, knowledgeable, patient staff of degreed Applications and Sales Engineers in both our Headquarters and Subsidiary Offices. These experienced engineers are always available to answer any questions you may have concerning the selection or use of any of our products. Please do not hesitate to call us.

3.3 Volt
DC/DC Converters

- Isolated (UWR Models) and non-isolated (UNR Models)
- ± 1% (± 33mV) output accuracy
- Nominal 5/12/24/48V inputs
- Output currents to 15 Amps
- Power densities to 29W/in³
- UL/CSA/IEC approved; EMC tested
- Modifications and customs for OEM's

UWR/UNR Models

Today's low-voltage/high-current CPU's, memory and logic demand power processing at the point-of-use. DATEL's new switching DC/DC's efficiently take you from any V_{IN} (5/12/24/48V nom.) to 3.3V with the load regulation and rapid transient response you require.

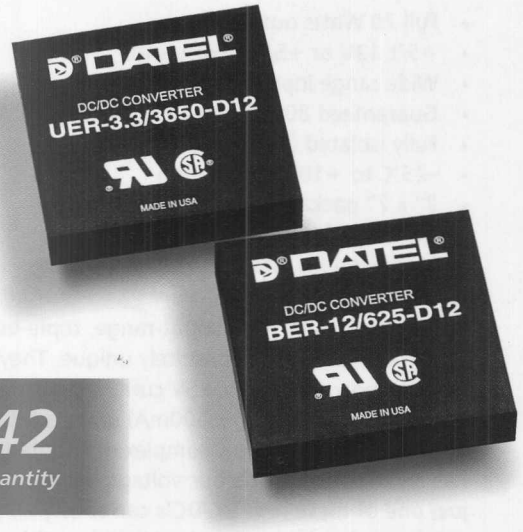


On-Board Power Processing

Fax Codes: Isolated 20710
Non-Isolated 23010

See page 4 for more details.

12-15 Watt
Low-Cost DC/DC Converters



UER/BER Models

$42 in Quantity

Fax Codes: Single Output 20220
Dual Output 21220

- Single (UER Models) and dual (BER Models) outputs
- Rugged, fully encapsulated, diallyl phthalate packages
- Standard form factor (2" x 2") and pinouts
- Wide input voltage ranges: 9-36V, 18-72V
- All standard outputs: 3.3/5/12/15V, ± 5/12/15V
- Superb line and load regulation
- Fully isolated (750Vdc) and I/O protected
- UL/CSA/IEC approved; EMC tested
  Modifications and customs for OEM's

DATEL's new XER Series 12-15W DC/DC's are an excellent solution for a distinct set of cost-sensitive, moderate-power applications requiring relatively high performing, extremely reliable converters. Their standard packages and pinouts also make them ideal replacements for older, expensive, less-reliable 10-15W converters.

See pages 4 and 5 for more details.

1" x 1"
5-10 Watt DC/DC Converters

$35 *in Quantity*

- 1" x 1" x 0.45" packages with standard 2" x 1" pinouts
- Full 5W (isolated) and 10W (non-isolated) output powers
- Single/dual outputs: 3.3/5/12/15V, ± 5/12/15V
- Standard inputs:
  18-36V/36-72V isolated (UWR/BWR Models)
  4.75-5.5V/10.8-13.2V non-isolated (UNR Models)
- UL/CSA/IEC approved; EMC tested
- Modifications and customs for OEM's

Put power processing at the point-of-use. These true component-like devices provide full isolation (1000Vdc), excellent regulation and rapid transient response wherever you need it.

See pages 4 and 5 for more details.

UWR/BWR Models

Fax Codes: Single Output 20110
Dual Output 21110

20 Watt
Triple-Output DC/DC Converters

TWR Models

Power Sharing!

You decide the output currents.

Fax Code 22310

- Full 20 Watts output power
- +5/± 12V or +5/± 15V outputs
- Wide range inputs: 9-36V or 18-72V
- Guaranteed 80% minimum efficiency
- Fully isolated (750Vdc minimum)
- –25°C to +100°C operation
- 2" x 2" package; 5-sided shielding
- UL/CSA/IEC approved; EMC tested
- Modifications and customs for OEM's

DATEL's new 20W, wide-input-range, triple-output DC/DC converters are absolutely unique. They provide any combination of primary +5V current (to 3A) and auxiliary ± 12V/15V currents (to ± 500mA) up to a total output power of 20 Watts. If your new complex distributed power system has an intermediate dc bus voltage between 9V and 72V, just one of these new DC/DC's can satisfy all your power needs in a local mixed analog/digital partition.

See page 5 for more details.

DATEL, Inc., 11 Cabot Boulevard, Mansfield, MA 02048-1151 (U.S.A.)
Telephone: 508-339-3000 Fax: 508-339-6356 Email: datellit@mcimail.com

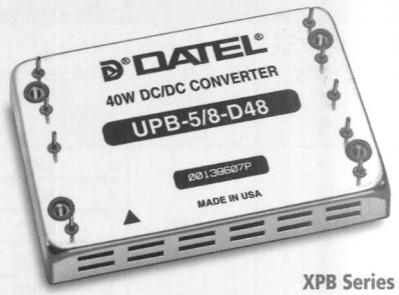
DATEL® INNOVATION and EXCELLENCE

Standard-Pinout, Smaller-Package 25-40 Watt DC/DC Converters

- Standard pinouts!
- 33% smaller packages!
- 25/30/35/40W output powers
- Four input ranges:
  10-36V, 18-36V
  18-72V, 36-72V
- High efficiencies (to 83%)
- Fully isolated (750Vdc min.)

2"x3" Package Fits 3"x3" Sockets

PRELIMINARY DATA



XPB Series

	Output Power	Model	Output					Input			Efficiency (Min.)
			VOUT (Volts)	IOUT (Amps, Max.)	Ripple/Noise ① (mVp-p, Max.)	Regulation (Max.) Line	Regulation (Max.) Load ②	VIN Nom. (Volts)	Range (Volts)	IIN ③ (mA, Max.)	
Single Output	25 Watts	UPB-5/5-Q12	5	5	100	±0.5%	±1%	24	10-36	45/1340	78%
		UPB-12/2.1-Q12	12	2.1	150	±0.5%	±1%	24	10-36	45/1302	80%
		UPB-15/1.7-Q12	15	1.7	150	±0.5%	±1%	24	10-36	45/1302	80%
	30 Watts	UPB-5/6-Q48	5	6	100	±0.5%	±1%	48	18-72	25/801	78%
		UPB-12/2.5-Q48	12	2.5	150	±0.5%	±1%	48	18-72	25/781	80%
		UPB-15/2-Q48	15	2	150	±0.5%	±1%	48	18-72	25/781	80%
	35 Watts	UPB-5/7-D24	5	7	100	±0.5%	±1%	24	18-36	45/1823	80%
		UPB-12/3-D24	12	3	150	±0.5%	±1%	24	18-36	45/1778	82%
		UPB-15/2.5-D24	15	2.5	150	±0.5%	±1%	24	18-36	45/1778	82%
	40 Watts	UPB-5/8-D48	5	8	100	±0.5%	±1%	48	36-72	25/1042	80%
		UPB-12/3.3-D48	12	3.3	150	±0.5%	±1%	48	36-72	25/1143	82%
		UPB-15/2.65-D48	15	2.65	150	±0.5%	±1%	48	36-72	25/1143	82%
Dual Output	25 Watts	BPB-5/4-Q12	±5	±4	120	±0.5%	±1%	24	10-36	45/1340	78%
		BPB-12/1.65-Q12	±12	±1.65	150	±0.5%	±1%	24	10-36	45/1302	80%
		BPB-15/1.3-Q12	±15	±1.3	150	±0.5%	±1%	24	10-36	45/1302	80%
	30 Watts	BPB-5/4-Q48	±5	±4	120	±0.5%	±1%	48	18-72	25/801	78%
		BPB-12/1.65-Q48	±12	±1.65	150	±0.5%	±1%	48	18-72	25/781	80%
		BPB-15/1.3-Q48	±15	±1.3	150	±0.5%	±1%	48	18-72	25/781	80%
	35 Watts	BPB-5/4-D24	±5	±4	120	±0.5%	±1%	24	18-36	45/1823	80%
		BPB-12/1.65-D24	±12	±1.65	150	±0.5%	±1%	24	18-36	45/1757	83%
		BPB-15/1.3-D24	±15	±1.3	150	±0.5%	±1%	24	18-36	45/1757	83%
	40 Watts	BPB-5/4-D48	±5	±4	120	±0.5%	±1%	48	36-72	25/1042	80%
		BPB-12/1.65-D48	±12	±1.65	150	±0.5%	±1%	48	36-72	25/1004	83%
		BPB-15/1.3-D48	±15	±1.3	150	±0.5%	±1%	48	36-72	25/1004	83%
Triple Output	25 Watts	TPB-5/5-12/1-Q12	+5	5	120	±1%	±1.5%	24	10-36	75/1302	80%
			±12	±1	150	±8%	±8%				
		TPB-5/5-15/1-Q12	+5	5	120	±1%	±1.5%	24	10-36	75/1302	80%
			±15	±1	150	±8%	±8%				
	30 Watts	TPB-5/5-12/1-Q48	+5	5	120	±1%	±1.5%	48	18-72	40/781	80%
			±12	±1	150	±8%	±8%				
		TPB-5/5-15/1-Q48	+5	5	120	±1%	±1.5%	48	18-72	40/781	80%
			±15	±1	150	±8%	±8%				
	35 Watts	TPB-5/5-12/1-D24	+5	5	120	±1%	±1.5%	24	18-36	75/1757	83%
			±12	±1	150	±8%	±8%				
		TPB-5/5-15/1-D24	+5	5	120	±1%	±1.5%	24	18-36	75/1757	83%
			±15	±1	150	±8%	±8%				
	40 Watts	TPB-5/5-12/1-D48	+5	5	120	±1%	±1.5%	48	36-72	40/1004	83%
			±12	±1	150	±8%	±8%				
		TPB-5/5-15/1-D48	+5	5	120	±1%	±1.5%	48	36-72	40/1004	83%
			±15	±1	150	±8%	±8%				

Listed specifications are typical at T_A = +25°C under nominal line voltage and full load conditions unless otherwise noted.

① 20MHz bandwidth.

② Listed load-regulation specifications apply under the following conditions: single outputs, 10-100% load; dual outputs, balanced loads, 20-100%; triple outputs, 10-100% load on the primary +5V output, 20-100% balanced loads on the auxiliary outputs.

③ Nominal line voltage, no load/full load conditions.

Fax Code 24010

Product Line Summary

Single Output, Non-Isolated DC/DC Converters

Output Power (Watts)	Output Voltage (Volts)	Rated Output Current (mA)	Input Voltage Range (Volts)	Package Dimensions (Inches)	Models and Features	Fax Code
8-50	3.3	2500	10.8-13.2	1 x 1 x 0.45	UNR Models. Low cost. ± 1% accuracy. Guaranteed efficiencies to 86%. Power densities to 29W/in³. No heat sinks.	23010
		3000	4.75-5.5	1 x 1 x 0.45		
		8000	4.75-5.5	2 x 1 0.45		
		12000	4.75-5.5	2 x 2 x 0.45		
		15000 ①	4.75-5.5	2 x 2 x 0.45		

① Preliminary. Contact DATEL for availability.

Single Output, Isolated DC/DC Converters

Output Power (Watts)	Output Voltages (Volts)	Range of Rated Output Currents (mA)	Input Voltage Ranges (Volts)	Package Dimensions (Inches)	Models and Features	Fax Code
3	5 12 15	200-500	4.5-9 9-18 18-72	1.25 x 0.8 x 0.45	UWR Models. 24-pin DIP form factor. Internal I/O filtering. Standard package and pinout.	20010
5	5 12 15	335-1000	18-36 36-72	1 x 1 x 0.45	UWR Models. Smallest 5W DC/DC's. No external components. 5-side shielding.	20110
6-10	3.3 5/5.2 12 15	530-2500	4.7-7 9-18 18-72	2 x 1 x 0.375	UWR Models. High density. Standard package and pinout.	20210
12-15	3.3 5 12 15	1000-3650	9-36 18-72	2 x 2 x 0.5	UER Models. Low-cost plastic package. 4:1 input ranges. Standard pinout.	20220
14-20	3.3 5/5.2 12 15	1000-4850	4.7-10.2 9-36 18-72	2 x 2 x 0.45	UWR Models. Wide input ranges. 5-side shielding. Standard package and pinout.	20310
16-20	3.3 5 12 15	1300-4850	9-36 18-72	2 x 2 x 0.45	UHR Models. Ceramic/metal construction. 4:1 input ranges. Standard pinout.	20320

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Telephone: 508-339-3000 Fax: 508-339-6356 Email: datellit@mcimail.com

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Product Line Summary

Dual Output, Isolated DC/DC Converters

Output Power (Watts)	Output Voltages (Volts)	Range of Rated Output Currents (mA)	Input Voltage Ranges (Volts)	Package Dimensions (Inches)	Models and Features	Fax Code
3	± 5 ± 12 ± 15	± 85 to ± 250	4.5-9 9-18 18-72	1.25 x 0.8 x 0.45	BWR Models. 24-pin DIP form factor. Internal I/O filtering. Standard package and pinout.	21010
5	± 5 ± 12 ± 15	± 165 to ± 500	18-36 36-72	1 x 1 x 0.45	BWR Models. Smallest 5W DC/DC's. No external components. 5-side shielding.	21110
7-10	± 5 ± 12 ± 15	± 275 to ± 800	4.7-7 9-18 18-72	2 x 1 x 0.375	BWR Models. High density. Standard package and pinout.	21210
15	± 5 ± 12 ± 15	± 500 to ± 1500	9-36 18-72	2 x 2 x 0.5	BER Models. Low-cost plastic package. 4:1 input ranges. Standard pinout.	21220
15-20	± 5 ± 9 ± 12 ± 15	± 500 to ± 1700	4.6-10.2 9-36 18-72	2 x 2 x 0.45	BWR Models. Wide input ranges. 5-side shielding. Standard package and pinout.	21310
17-20	± 5 ± 12 ± 15	± 670 to ± 1700	9-36 18-72	2 x 2 x 0.45	BHR Models. Ceramic/metal construction. 4:1 input ranges. Standard pinout.	21320

Triple Output, Isolated DC/DC Converters

Output Power (Watts)	Output Voltages (Volts)	Range of Rated Output Currents (mA) Primary / Auxiliary	Input Voltage Ranges (Volts)	Package Dimensions (Inches)	Models and Features	Fax Code
8-11	+5 and ± 12/15	800-1000 ± 125 to ± 210	4.7-7 9-18	2 x 1 x 0.375	TWR Models. Industry's smallest, full featured triples.	22210
12-15	+5 and ± 12/15	1000-1800 ± 150 to ± 250	18-72	2 x 2 x 0.45	TWR Models. Wide input range. Standard package and pinout.	22220
20	+5 and ± 12/15	3000 ± 500	9-36 18-72	2 x 2 x 0.45	TWR Models. Power sharing design. Wide input ranges. Standard package and pinout.	22310

Custom Capabilities

DATEL's world-class design, development and manufacturing team stands ready to work with you to deliver the exact power converter you need for your demanding, large-volume, OEM applications. And . . . we'll do it on time and within budget!

Our experienced applications and design staffs; quick-turn prototype capability; highly automated, SMT assembly facilities; and in-line SPC quality-control techniques combine to give us the unique ability to design and deliver any quantity of power converters to the highest standards of quality and reliability.

We have compiled a large library of DC/DC designs that are currently used in a variety of telecom, medical, computer, railway, aerospace and industrial applications. Contact us. We may already have the converter you need.

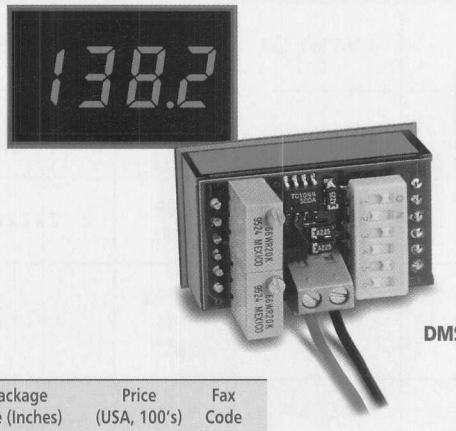
Order your complete product line catalog, including a 50-page tutorial on theory, testing and applications, through the Fax Back system.

Application-Specific, 2-Terminal "Self-Powered" Instruments

Two connections - no external power required
Large, LED or LCD displays with great readability
Small, rugged packages with reliable screw terminals

4-to-20mA Loop-Powered Meters

- Completely loop powered - no external supplies
- Easy-to-read, low-power, LED or LCD displays
- DIP-switch selectable range and decimal points
- Hundreds of different input/readout combinations
- On-board gain (span) and offset (zero) adjustments
- Vibration-resistant package; reliable screw terminals

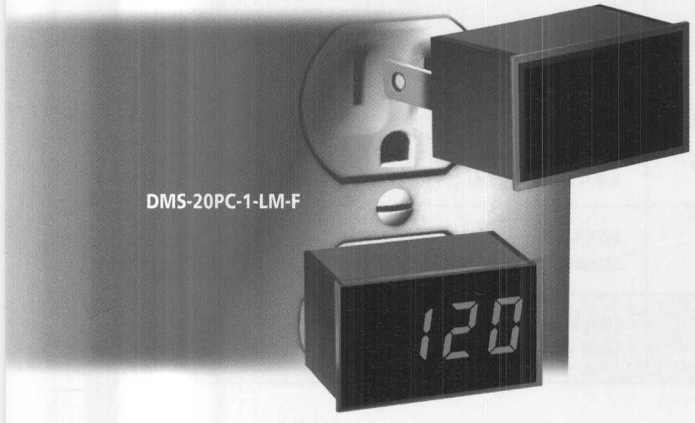


DMS-20PC-4/20

Industry's First 4-20mA LED Display

Model	Input Range ①	Display	Readout ②	Digit Height	Package Size (Inches)	Price (USA, 100's)	Fax Code
DMS-20PC-4/20	4 to 20mA	Red LED	3½ Digits	0.37"/9.4mm	1.38 x 0.88 x 1.00	$60	34620
DMS-30LCD-4/20S	4 to 20mA	LCD	3½ Digits	0.4"/10.2mm	2.17 x 0.92 x 0.95	$60	34610

① Both units operate in most 10-50mA applications.
② Accuracy is ± 0.05%FS ± 1 count. Full scale (FS) is the maximum display reading for the configured device.



DMS-20PC-1-LM-F

AC Voltmeters

- The easiest-to-use, most versatile product of its type
- Plugs directly into wall outlets
- Screw terminals for panel mounting
- Large, easy-to-read, red LED display
- Monitors 85-264Vac at 47-63Hz
- 3-digit readout; ± 1V accuracy
- Rugged, epoxy-encapsulated construction
- UL, CSA, IEC1010-1 certified

Fax Code 34210

AC Frequency Meters

- Ideal for emergency power-generating equipment
- Available in 50/60Hz or 400Hz versions; 85-140Vac inputs
- 3-digit readout accurate to ± 0.1 Hertz (60Hz model)
- Easy-to-read, large (0.4"/10.2mm), red LED displays
- Screw terminals for easy panel mounting
- Subminiature, 1.38" x 0.88" x 1.00" packages
- Rugged, epoxy-encapsulated construction

Fax Code 34410

DMS-20PC-1-FM

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Telephone: 508-339-3000 Fax: 508-339-6356 Email: datellit@mcimail.com

DATEL® INNOVATION and EXCELLENCE

DC Voltage Monitors

DMS-20PC-3-DCM

3.3V for Low-Voltage Systems

- Ideal for low-voltage (2-6V) power supply monitoring
- 0.01V resolution; ± 0.01V accuracy
- 80mA maximum current drain from 3.3V
- Reverse polarity protected
- Subminiature, 1.38" x 0.88" x 1.00" package
- Large, 0.37"/9.4mm, bright red, LED display
- Reliable, epoxy-encapsulated construction

Fax Code 34020

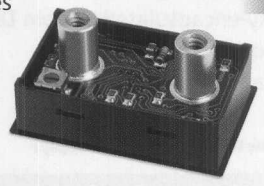
DMS-20LCD-0-DCM

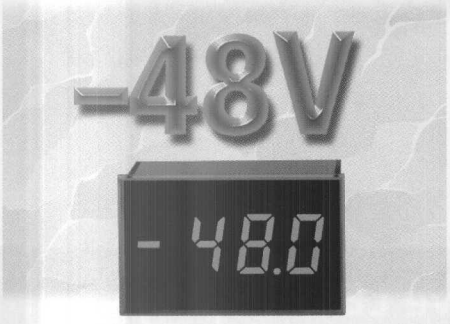
12V Battery Monitoring

Super Low Cost

- ± 0.01V accuracy (12V model); 3mA max. current drain
- Ideal for 9/12/24/28/36V power supply monitoring
- Subminiature, 1.38" x 0.88" x 0.66" packages
- Less than $15 each in OEM quantities
- Two ranges: 6.5-18V or 17-40V
- Reverse polarity protected
- Large, 0.37"/9.4mm, LCD displays

Fax Code 34110





DMS-20PC-5-DCM

± 48V for Distributed Power Systems

- Ideal for monitoring 48V buses in telecom/computer systems
- Two negative ranges: –18 to –50V or –30 to –264V
- Two positive ranges: +18 to +50V or +30 to +264V
- Reverse polarity protected; Ultra-low power consumptions
- Subminiature, 1.38" x 0.88" x 1.00" packages
- Large, 0.37"/9.4mm, bright red, LED displays
- Reliable, epoxy-encapsulated construction

Fax Codes 34030, 34010

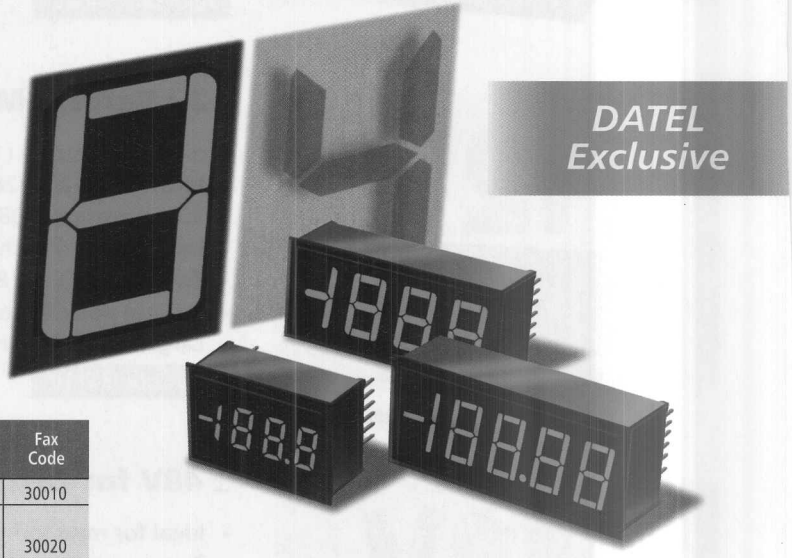
Parameter	Display Type ①	Input Range	Resolution	Accuracy	Maximum Current Drain	Package Size (Inches) ②	DATEL Part Number	Price (USA, 100's)	Fax Code
AC Voltage ③	LED	85-264Vac ④	1V	± 1V	50mArms	1.38 x 0.88 x 1.00	DMS-20PC-1-LM	$40	34210
		85-264Vac ④	1V	± 1V	50mArms	1.38 x 0.88 x 1.00	DMS-20PC-1-LM-F	$37	
AC Frequency	LED	47.0-99.0Hz ⑤	0.1Hz	± 0.1Hz	50mArms	1.38 x 0.88 x 1.00	DMS-20PC-1-FM	$54	34410
		350-450Hz ⑤	1Hz	± 1Hz	50mArms	1.38 x 0.88 x 1.00	DMS-20PC-2-FM		
DC Voltage	LED	+2.00 to +6.00Vdc	0.01V	± 0.01V	80mA	1.38 x 0.88 x 1.00	DMS-20PC-3-DCM	$37	34020
		+4.50 to +19.99Vdc	0.01V	± 0.01V	13mA	1.38 x 0.88 x 1.00	DMS-20PC-0-DCM	$37	34010
		+18.0 to +50.0Vdc	0.1V	± 0.1V	13mA	1.38 x 0.88 x 1.00	DMS-20PC-1-DCM		
		+30 to +264Vdc	1V	± 1V	7mA	1.38 x 0.88 x 1.00	DMS-20PC-2-DCM		
		–4.50 to –19.99Vdc	0.01V	± 0.01V	13mA	1.38 x 0.88 x 1.00	DMS-20PC-4-DCM	$37	34030
		–18.0 to –50.0Vdc	0.1V	± 0.1V	13mA	1.38 x 0.88 x 1.00	DMS-20PC-5-DCM		
		–30 to –264Vdc	1V	± 1V	7mA	1.38 x 0.88 x 1.00	DMS-20PC-6-DCM		
	LCD	+6.50 to +18.00Vdc	0.01V	± 0.01V	3mA	1.38 x 0.88 x 0.66	DMS-20LCD-0-DCM	$21	34110
		+17.0 to +40.0Vdc	0.1V	± 0.1V	1mA	1.38 x 0.88 x 0.66	DMS-20LCD-1-DCM		

① All LED displays are red. Both LED and LCD displays have a digit height of 0.37"/9.4mm. Frequency meters have an LED digit height of 0.4"/10.2mm.
② Panel-mount, front bezels with or without sealing gaskets may be ordered separately.
③ AC voltmeters are available with either screw terminals for traditional panel mounting or "blade" terminals ("-F" model) that plug directly into wall outlets.
④ 47-63Hz ⑤ 85-140Vac

NEW, Low-Power, LED-Display DPM's at LCD Power Levels

The superior, long-distance, all-angle "readability" of LED-display panel meters is now available at the low power levels of those hard-to-read LCD meters

- Current drains as low as 7mA (35mW)
- Bright red, orange or green displays
- Easily readable from 20 feet
- Single +5V supply
- 4 standard input voltage ranges
- Rugged, epoxy-encapsulated, 12-pin DIP packages*
- Panel or pc-board mountable
- Low cost! Made in the USA!



DATEL Exclusive

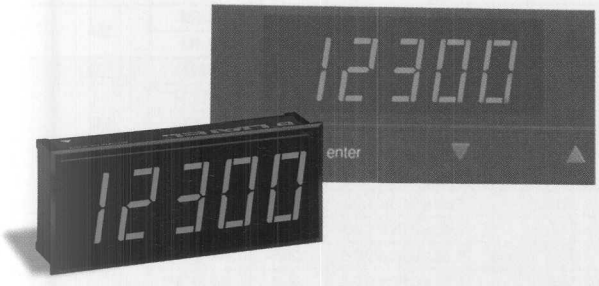
Digital Panel Voltmeters (Single +5V Supply)

Resolution	DATEL Series	LED Color	Current Drain	Digit Height	Price (USA, 100's)	Fax Code
3½ Digits	DMS-20PC	Red	7mA	0.37"	$32	30010
	DMS-30PC	Red	12mA	0.56"	$37	30020
		Green	60mA	0.56"		
		Orange	60mA	0.56"		
4½ Digits	DMS-40PC	Red	35mA	0.52"	$66	31010

* Package dimensions: DMS-20PC 1.38" x 0.88" x 0.475" (35mm x 22mm x 12mm)
DMS-30/40PC 2.17" x 0.92" x 0.56" (55mm x 23mm x 14mm)

Miniature, 4½ Digit, BCD Input, Slave LED Displays

Low cost! Complete! No external components required!



DSD-40BCD Series

- Ideal for computer-based instruments
- Rugged, epoxy-encapsulated, 12-pin DIP packages
- Miniature size: 2.17" x 0.92" x 0.56"
  55mm x 23mm x 14mm
- Built-in color filters and bezels
- Single +5V supply, TTL compatible
- Low-power model, 35mA (175mW)
- Large (0.52"/13.2mm), matched-intensity, displays
- Choice of red, low-power red or green LED's
- Minus sign and decimal points included
- PC-board or panel mountable

Fax Code 33110

DATEL, Inc., 11 Cabot Boulevard, Mansfield, MA 02048-1151 (U.S.A.)
Telephone: 508-339-3000 Fax: 508-339-6356 Email: datellit@mcimail.com

DATEL® INNOVATION and EXCELLENCE

Panel Meter Product Line Summary

World's smallest Digital Voltmeters
Encapsulated 12-pin DIP packages
Moisture and vibration proof

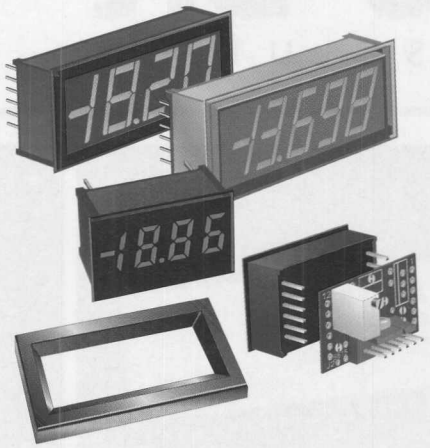
Low cost, high performance
± 1 count typical accuracy

Large, highly visible displays
7 bright LED colors
Backlit LCD's for day/nite operation

4 standard input ranges
± 200mV, ± 2V, ± 20V, ± 200V

Low-power LED's - a DATEL exclusive
As low as 7mA from +5V
Ideal for portable instruments

Panel or pc-board mountable
Integral color filter bezels
Optional external bezels



Optional signal conditioning boards and accessories

DMS-EB	Multipurpose (4-20mA, gain/offset adjust, etc.)
DMS-EB2	Multipurpose board for DMS-20 Series
DMS-EB-AC/DC	For ac line-powered applications
DMS-EB-DC/DC	Provides isolated +5V power
DMS-EB-HTB	Temperature probe sensing for 200mV models
DMS-EB-LP	For 4-20mA loop-powered applications
DMS-EB-RMS	For true rms measurements of ac voltages
DMS-EB-TCJ	J-type thermocouple inputs for ± 2V models
DMS-EB-TCK	K-type thermocouple inputs for ± 2V models
DMS-BZL1	DMS-30 & DMS-40 bezel assembly
DMS-BZL2	DMS-30 & DMS-40 bezel assembly with sealing gasket
DMS-BZL3	DMS-20 bezel assembly
DMS-BZL4	DMS-20 bezel assembly with sealing gasket
DMS-20-CP	DMS-20 panel cutout punch
DMS-30-CP	DMS-30 & DMS-40 panel cutout punch

Order full-line catalog for more details

Ordering Guide

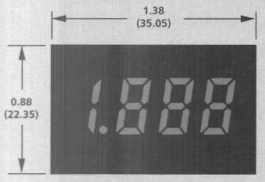
DMS-20 SERIES
3½ Digit Subminiature Digital Voltmeters

DMS-20PC - 1 - R S - H

- **LED Model**
- **Input Range**: 0 ± 200mV; 1 ± 2V; 2 ± 20V; 3 ± 200V
- **LED Color**: Y Yellow; O Orange; A Amber; R Red; G Green
- **Power/Intensity**: S Standard; H High Intensity (Red only); L Low Power (Red only)
- **Display Hold Function** (Red std. only)

DMS-20LCD - 1 - 5 B

- **LCD Model**
- **Input Range**: 0 ± 200mV; 1 ± 2V; 2 ± 20V; 3 ± 200V
- **Power Supply**: 5 +5Vdc; 9 9 to 12V Battery
- Add **B** for Backlit



CASE DEPTH — LED: 0.475 in. (12.07mm); LCD: 0.425 in. (10.80mm)
DIGIT HEIGHT — LED: 0.37 in. (9.4mm); LCD: 0.37 in. (9.4mm)

LED Fax Code 30010
LCD Fax Code 30110

DMS-30 SERIES
3½ Digit Miniature Digital Voltmeters

DMS-30PC - 1 - R S

- **LED Model**
- **Input Range**: 0 ± 200mV; 1 ± 2V; 2 ± 20V; 3 ± 200V
- **LED Color**: Y Yellow; O Orange; A Amber; R Red; G Green; B Blue; Q Aqua
- **Power/Intensity**: S Standard; H High Intensity (Red only); L Low Power (Red, orange, and green only)

DMS-30LCD - 1 - 5 B

- **LCD Model**
- **Input Range**: 0 ± 200mV; 1 ± 2V; 2 ± 20V; 3 ± 200V
- **Power Supply**: 5 +5Vdc; 9 9 to 12V Battery
- Add **B** for Backlit

CASE DEPTH — LED and LCD BACKLIT: 0.56 in. (14.22mm); LCD: 0.43 in. (10.92mm)
DIGIT HEIGHT — LED: 0.56 in. (14.2mm); LCD: 0.40 in. (10.2mm)

LED Fax Code 30020
LCD Fax Code 30120

DMS-40 SERIES
4½ Digit Miniature Digital Voltmeters

DMS-40PC - 1 - R S - BCD

- **LED Model**
- **Input Range**: 1 ± 2V; 2 ± 20V; 3 ± 200V
- **LED Color**: Y Yellow; R Red; G Green
- **Power/Intensity**: S Standard; H High Intensity (Red only); L Low Power (Red only)
- **Optional BCD output** (Red std. only)

DMS-40LCD - 0/1 - 5 B

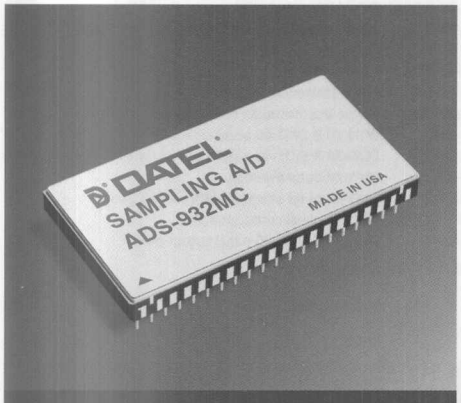
- **LCD Model**
- **Input Range**: 0/1 ± 200mV/± 2V; 1/2 ± 2V/± 20V; 2/3 ± 20V/± 200V
- **Power Supply**: 5 +5Vdc; 9 9 to 12V Battery
- Add **B** for Backlit

CASE DEPTH — LED and LCD BACKLIT: 0.56 in. (14.22mm); LCD: 0.43 in. (10.92mm)
DIGIT HEIGHT — LED: 0.52 in. (13.2mm); LCD: 0.40 in. (10.2mm)

LED Fax Code 31010
LCD Fax Code 31110

Complete product line catalog, with 16 Ap Notes, can be ordered through the Fax Back system.

16-Bit
RESOLUTION



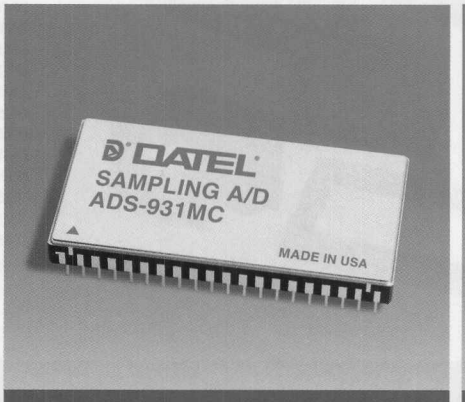
High Performance

2MHz

ADS-932

- Functionally complete, requires no external support circuitry
- Small, 40-pin, ceramic TDIP package
- ± 5V supplies; 1.85 Watts
- No missing codes over temperature
- Low noise, 70µVrms
- Excellent dynamic performance:
  Peak harmonics as low as –89dB
  THD as low as –88dB
  SNR as high as 86dB
- Ideal for both time and frequency-domain applications
- ± 2.75V input range
- Commercial and military temperature ranges
- Edge triggered; On-board FIFO
- TTL compatible

Fax Code 13030



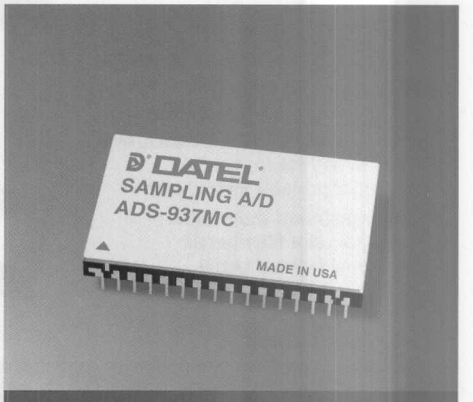
High Performance

1MHz

ADS-931

- Functionally complete, requires no external support circuitry
- Small, 40-pin, ceramic TDIP package
- ± 5V supplies; 1.85 Watts
- No missing codes over temperature
- Low noise, 60µVrms
- Superior dynamic performance:
  Peak harmonics as low as –89dB
  THD as low as –89dB
  SNR as high as 87dB
- Ideal for both time and frequency-domain applications
- ± 2.75V input range
- Commercial and military temperature ranges
- Edge triggered; On-board FIFO
- TTL compatible

Fax Code 13020



Low Power/Cost

1MHz

ADS-937

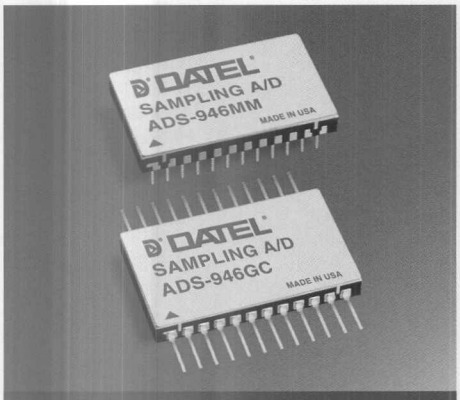
- Low cost!
- Extremely low power, 1.1 Watts
- Small, 32-pin, ceramic, side-brazed TDIP package
- Guaranteed 1MHz sampling rate
- No missing codes over temperature
- Sampling to Nyquist frequencies
- Impressive dynamic performance:
  –84dB peak harmonics (f_{IN} = 500kHz)
  –82dB THD (f_{IN} = 500kHz)
  80dB SNR (f_{IN} = 500kHz)
- TTL compatible; Edge triggered
- 0 to –10V or ± 5V input

  Commercial and military temperature ranges

Fax Code 13040

DATEL, Inc., 11 Cabot Boulevard, Mansfield, MA 02048-1151 (U.S.A.)
Telephone: 508-339-3000 Fax: 508-339-6356 Email: datellit@mcimail.com

14-Bit RESOLUTION



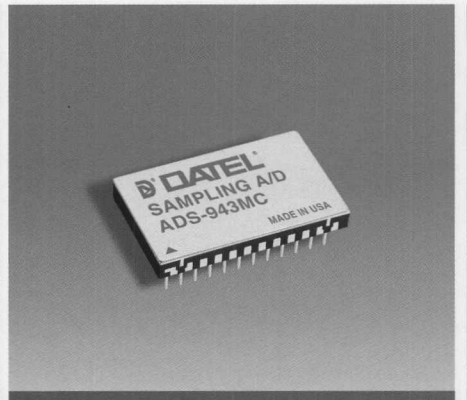
24-Pin DDIP

8MHz

ADS-946

- Functionally complete, requires no external support circuitry
- 8MHz sampling rate guaranteed
- Small, 24-pin, ceramic DDIP or SMT (gull-wing) package
- ± 5V supplies; 1.9 Watts; TTL compatible
- Low noise, 150µVrms
- Impressive dynamic performance:
  –75dB peak harmonics (f_{IN} = 1MHz)
  –75dB THD (f_{IN} = 1MHz)
  77dB SNR (f_{IN} = 1MHz)
- No missing codes over temperature
- Edge triggered; No pipeline delays
- ± 2V input range
- Commercial and military temperature ranges
- MIL-STD-883 qualified (Q2 1997)

Fax Code 12120



Low Harmonics

3MHz

ADS-943

- Optimized for modern telecom and datacom applications
- Functionally complete, requires no external support circuitry
- 3MHz sampling rate guaranteed
- Outstanding dynamic performance:
  –83dB peak harmonics (f_{IN} = 500kHz)
  –81dB THD (f_{IN} = 500kHz)
  –82dB two-tone IMD
  79dB SNR (f_{IN} = 500kHz)
- 24-pin DDIP package; ± 5V supplies
- Low power, 1.7 Watts
- Low noise, 150µVrms
- Edge triggered; No pipeline delays
- ± 2V input range; TTL compatible
- Commercial and military temperature ranges
- No missing codes over temperature
- MIL-STD-883 qualified (Q2 1997)

Fax Code 12100

High Performance

10MHz

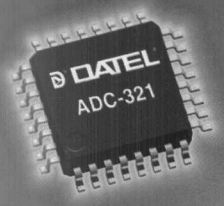
ADS-947 (Preliminary)

- A bonafide leading-edge product!
- Breaks all of today's performance/package/power barriers
- Functionally complete, requires no external support circuitry
- Small, 24-pin, ceramic DDIP or SMT (gull-wing) package
- Excellent for both time and frequency-domain applications
- Excellent dynamic performance:
  –78dB peak harmonics (f_{IN} = 2.5MHz)
  –76dB THD (f_{IN} = 2.5MHz)
  76dB SNR (f_{IN} = 2.5MHz)
- +5V and –5.2V supplies; 2 Watts
- No missing codes; ± 2V input range
- TTL compatible; Edge triggered

Contact DATEL for availability.

Fax Code 12140

Analog
SIGNAL PROCESSING

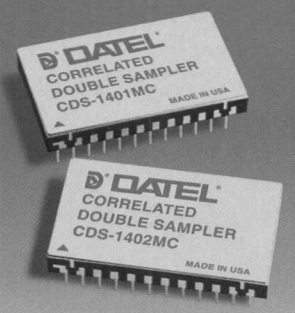


8-Bit Flash Converters

ADC-318, ADC-321

- High sampling rates:
  50MHz ADC-321
  120MHz ADC-318
- Wide input bandwidths:
  100MHz ADC-321
  150MHz ADC-318
- Low input capacitances:
  15pF ADC-321
  21pF ADC-318
- ± ½ LSB maximum DNL
- No sparkle-code errors
- No missing codes
- Plastic SMT packaging:
  32-pin PQFP ADC-321
  48-pin PQFP ADC-318
- Single +5V supplies
- Low power: 140mW ADC-321
  780mW ADC-318
- TTL compatible
- Low cost

Fax Codes 15070, 15080

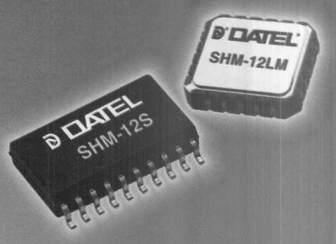


1-5MHz CDS Front Ends

CDS-1401, CDS-1402

- Complete, single-package, CDS functions
- Use with most CCD's and high-speed A/D converters
- Subtract "kTC" noise for maximum dynamic range
- "Ping-pong" timing achieves high pixel rates and low noise
- High throughput in 14-bit applications:
  1.25MHz CDS-1401
  5MHz CDS-1402
- Extremely versatile:
  2 independent S/H circuits
  Gain matching
  4 offset adjustments
  4 A/D control lines
- Small, 24-pin DDIP packages
- ± 15V or ± 5V supplies
- Low cost!

Fax Codes 15100, 15102



High-Performance Monolithic S/H Amplifiers

SHM-12, SHM-14

- Low cost!
- Single-chip, complementary bipolar process
- Excellent linearities:
  ± 0.006% SHM-12
  ± 0.0012% SHM-14
- Fast acquisition times:
  20nsec to ± 0.012% SHM-12
  25nsec to ± 0.012% SHM-14
- Wide bandwidths:
  120MHz SHM-12
  250MHz SHM-14
- Low output noise, 65µVrms
- High feedthrough rejection, 80dB
- 1psec aperture jitter
- ± 5V supplies; 300mW max. power
- Ceramic LCC or plastic SOIC packages
- Industrial & military temperature ranges
- Evaluation boards available

Fax Codes 15110, 15115

DATEL, Inc., 11 Cabot Boulevard, Mansfield, MA 02048-1151 (U.S.A.)
Telephone: 508-339-3000 Fax: 508-339-6356 Email: datellit@mcimail.com

DATEL®
INNOVATION and EXCELLENCE

Product Line Summary

Sampling Analog-to-Digital Converters

Resolution	Model ①	Sampling Rate (MHz)	Input Range(s) (Volts)	DNL (LSB's)	No Missing Codes ③	SNR (dB)	THD (–dB)	Power Supplies (Volts)	Power Dissipation (Watts)	Package ⑥	MIL-STD-883 Screening	Fax Code
10-12 Bits ②	ADS-325A ②	20	+2 to +4	±0.5	Yes	54	65	+5	0.15	48-Pin VQFP	No	10010
	ADS-112	1	±5, 0 to +10	±0.5	Yes	72	78	±15, +5	1.3	24-Pin DDIP	Yes	11010
	ADS-CCD1201 ④	1.2	0 to +10	±0.25	Yes	73	84	±15, +5 ④	1.7	24-Pin DDIP	No	11020
	ADS-117	2	±5, 0 to +10	±0.5	Yes	70	73	±15, +5	1.6	24-Pin DDIP	Yes	11030
	ADS-CCD1202 ④	2	0 to +10	±0.25	Yes	72	76	±15, +5 ④	1.75	24-Pin DDIP	No	11040
	ADS-118	5	±1	±0.5	Yes	69	71	±5	1.3	24-Pin DDIP	No	11050
	ADS-118A	5	±1.25	±0.5	Yes	69	71	±5	1.3	24-Pin DDIP	No	11050
	ADS-119	10	±1.5	±0.5	Yes	69	68	±5	1.8	24-Pin DDIP	Yes	11060
14 Bits	ADS-916 ⑤	0.5	0 to +10	±0.5	Yes	81	90	±15, +5 ⑤	1.6	24-Pin DDIP	No	12010
	ADS-926 ⑤	0.5	±5	±0.5	Yes	80	90	±15, +5 ⑤	1.3	24-Pin DDIP	Yes	12020
	ADS-917 ⑤	1	0 to +10	±0.5	Yes	79	85	±15, +5 ⑤	1.7	24-Pin DDIP	No	12030
	ADS-927 ⑤	1	±5	±0.5	Yes	79	90	±15, +5 ⑤	1.6	24-Pin DDIP	Yes	12040
	ADS-941	1	±5, 0 to +10	±0.5	Yes	80	85	±15, +5	2.8	32-Pin TDIP	No	12050
	ADS-919 ⑤	2	0 to +10	±0.5	Yes	77	74	±15, +5 ⑤	1.8	24-Pin DDIP	No	12060
	ADS-929 ⑤	2	±5	±0.5	Yes	78	79	±15, +5 ⑤	1.7	24-Pin DDIP	Yes	12070
	ADS-942	2	±5, 0 to +10	±0.5	Yes	75	80	±15, +5	2.9	32-Pin TDIP	No	12080
	ADS-942A	2	±5, 0 to +10	±0.5	Yes	75	80	±15, ±5	2.2	32-Pin TDIP	No	12090
	ADS-943	3	±2	±0.5	Yes	79	81	±5	1.7	24-Pin DDIP	Yes	12100
	ADS-944	5	±1.25	±0.5	Yes	76	77	±15, +5, –5.2	2.95	32-Pin TDIP	Yes	12110
	ADS-946	8	±2	±0.5	Yes	77	75	±5	1.9	24-Pin DDIP	Yes	12120
	ADS-945	10	±1.25	±0.5	Yes	78	80	±15, +5, –5.2	4.2	Custom DIP	No	12130
	ADS-947	10	±2	±0.5	Yes	76	76	+5, –5.2	2.0	24-Pin DDIP	No	12140
16 Bits	ADS-930	0.5	±5, 0 to –10	±0.75	Yes	83	89	±15, +5	3.5	40-Pin TDIP	No	13010
	ADS-931	1	±2.75	±0.75	Yes	87	89	±5	1.85	40-Pin TDIP	No	13020
	ADS-937	1	±5, 0 to –10	±0.5	Yes	84	85	±15, ±5	1.1	32-Pin TDIP	No	13040
	ADS-932	2	±2.75	±0.75	Yes	86	88	±5	1.85	40-Pin TDIP	No	13030

Listed specifications are typical at TA = +25°C, with nominal supplies, unless otherwise indicated. ① DATEL offers "MC" (0 to +70°C) and "MM" (–55 to +125°C) versions of each model.
② The ADS-325A has 10-bit resolution. All other devices in this section of the table are 12-bit converters. ③ Guaranteed over the full military temperature range (–55 to +125°C).
④ The ADS-CCD1201/2 have been optimized for electronic-imaging applications. They are pin-compatible and operate from either ±12V or ±15V supplies.
⑤ ADS-916, 917, 919, 926, 927 and 929 are all pin-compatible and operate from either ±12V or ±15V supplies. ⑥ Most devices available in SMT packaging. Contact DATEL for details.

Flash Analog-to-Digital Converters

Model ①	Resolution (Bits)	Guaranteed Conversion Rate	Differential Linearity Error, Max. (LSB's)	Integral Linearity Error, Max. (LSB's)	Input Range (Volts)	Power Supplies (Volts)	Power Dissipation (mW)	Package ②	Fax Code
ADC-207	7	20MHz	±0.5	±1	0 to +5	+5	250	18-Pin DIP M 24-Pin CLCC M	15010
ADC-228 ③	8	20MHz	±0.5	±0.5	0 to +5	+5, ±15	1.5 ④	24-Pin DDIP H	15030
ADC-304	8	20MHz	±0.5	±0.5	0 to –2	+5 or ±5	355	28-Pin DIP/SOP M	15040
ADC-305	8	20MHz	±0.5	±0.5 ⑤	0 to +2	+5	60	24-Pin DIP/SOP M	15050
ADC-321	8	50MHz	±0.5	±1.5	0 to +2	+5 or +3.3	140	32-Pin PQFP M	15080
ADC-318	8	120MHz	±0.5	±0.5	0 to +2	+5 or ±5	780	48-Pin PQFP M	15070

Listed specifications are typical at TA = +25°C, with nominal supplies, unless otherwise indicated. ① MIL-STD-883 screening available on ADC-207 and ADC-228.
② M = Monolithic, H = Multi-chip-module hybrid. ③ The ADC-228 is a "complete" flash A/D with reference, input buffer, 3-state output, etc. ④ Watts. ⑤ Listed specification is a typical.

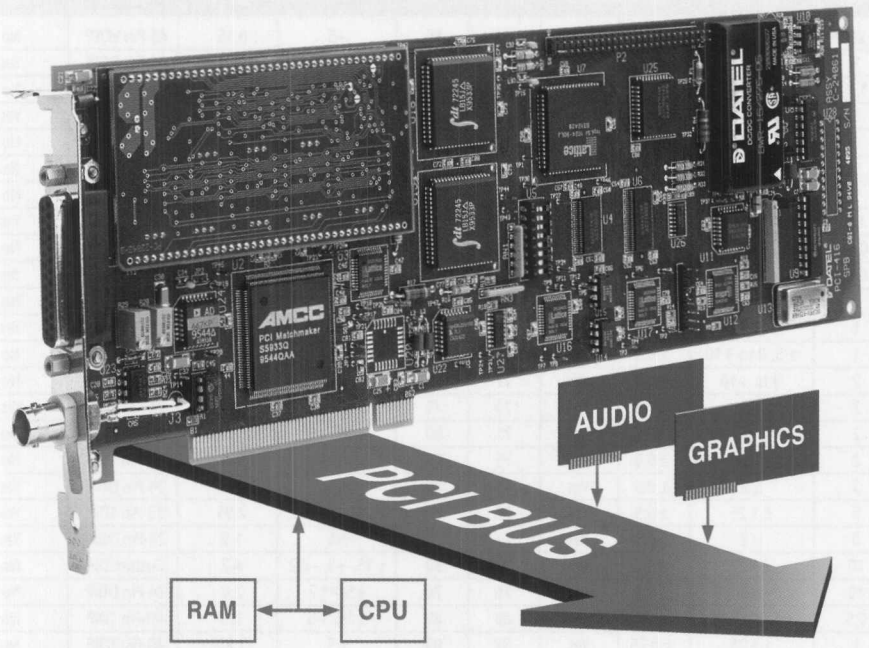
Other DATEL data acquisition components include:

S/H Amplifiers
CDS Circuits for CCD's
Analog Multiplexers
D/A Converters
Operational & Instrumentation Amplifiers
Tunable Active Filters

Order your complete product line catalog through the Fax Back system.

PCI Bus "Streaming" Data Acquisition

Fill huge host memory "forever" with 10MHz "gapless" A/D Data

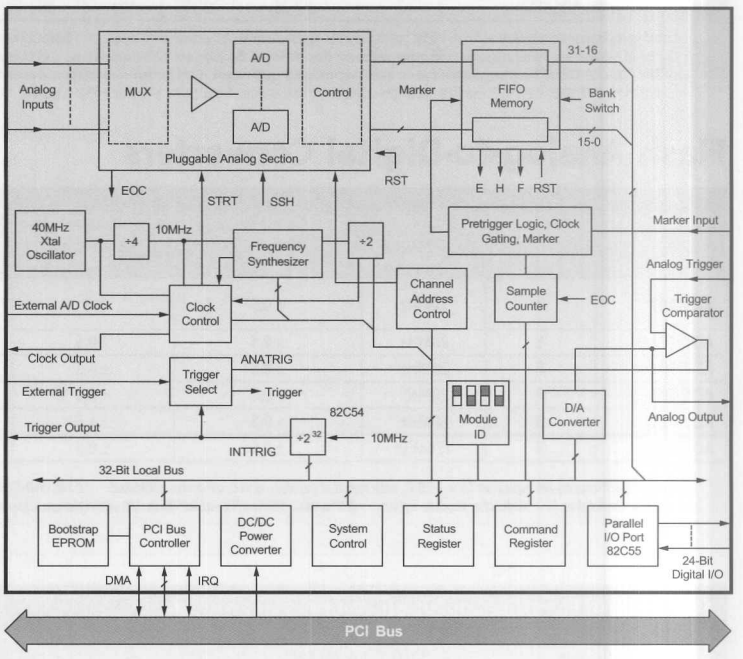


11 Models Starting at $2095

- On-board, PCI bus mastering
- 12/14/16-bit A/D's; Sampling rates to 10MHz
- Quick, 32-bit, PCI-burst DMA transfers
- Banked FIFO's move 2 A/D samples per transfer
- 2-16 channel simultaneous sampling
- Pre/post-trigger, gap-free, ring buffering
- Low noise/harmonics; Great for DSP/FFT!
- The ideal array-processor "front end"
- Windows, Windows NT, DOS and LabVIEW® software

Fax Code 40010

Model	Number of Channels	A/D Resolution	Number of A/D's	Sampling Rate Per Channel
PCI-416B	4	14 Bits	1	82kHz
PCI-416D	1	12 Bits	1	5MHz
PCI-416E	16SE/8D	12 Bits	1	125kHz
PCI-416F	2 Simul.	12 Bits	2	2MHz
PCI-416G	2 Simul.	14 Bits	2	1 or 2MHz
PCI-416H	1	12 Bits	1	10MHz
PCI-416J	8 Simul.	12 Bits	8	250/380kHz
PCI-416K	2 Simul.	12 Bits	2	5MHz
PCI-416L	16 Simul.	12 Bits	16	190kHz
PCI-416M	4 Simul.	16 Bits	4	200kHz
PCI-416N	2 Simul.	14 Bits	2	5MHz



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DATEL, Inc., 11 Cabot Boulevard, Mansfield, MA 02048-1151 (U.S.A.)
Telephone: 508-339-3000 Fax: 508-339-6356 Email: datellit@mcimail.com

DATEL® INNOVATION and EXCELLENCE

"Hot" New Analog Front Ends for Data Acquisition Boards

Analog Front Ends

12 Bits, 10MHz, Single Channel

"H" Models

- On-board S/H; 5MHz bandwidth
- ± 5V differential input; 2kΩ Z_{IN}
- –65dB THD; No missing codes

2 Channels, Simultaneous 12 Bits, 5MHz per Channel

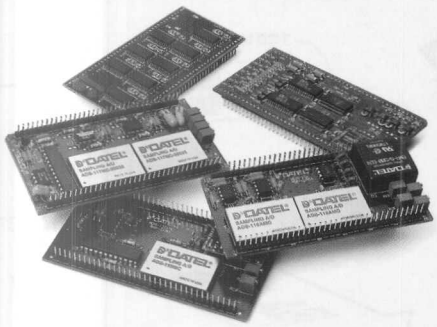
"K" Models

- 2 independent, 12-bit sampling A/D's
- +10V or ± 5V single-ended inputs
- –68dB THD; No missing codes

16 Channels, Simultaneous 12 Bits, 190kHz per Channel

"L" Models

- 16 independent, 12-bit sampling A/D's
- ± 5V/10V inputs; 8kΩ Z_{IN}; –75dB THD
- 400kHz sampling on a single channel



Install on These DATEL Boards

4 Channels, Simultaneous 16 Bits, 200kHz per Channel

"M" Models

- 4 independent, 16-bit sampling A/D's
- +10V or ± 5V differential inputs; 10^{10}Ω Z_{IN}
- User-selectable gain (1-10); –80dB THD

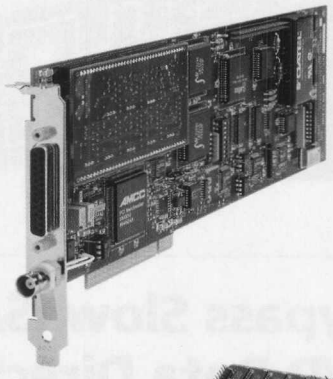
2 Channels, Simultaneous 14 Bits, 5MHz per Channel

"N" Models

- 2 independent, 14-bit sampling A/D's
- ± 1.5V input range; –75dB THD
- 8MHz sampling on a single channel

Carrier Boards

The boards below can carry up to 16 A/D converters of assorted resolution (12/14/16 bits) and speed (sampling rates to 10MHz). They offer standard software for Windows, Windows NT and DOS as well as LabVIEW® 4.0 drivers.

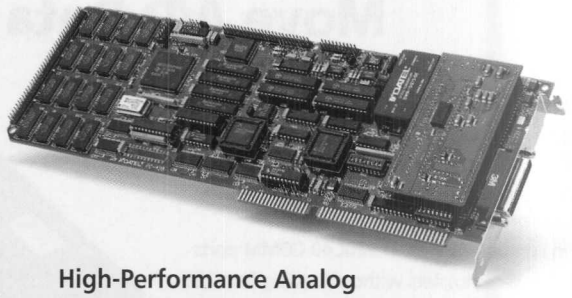


"Streaming" Data Acquisition for PCI Bus

PCI-416 (PCI Bus)

- On-board PCI bus mastering
- Quick, 32-bit, PCI-burst DMA transfers
- Banked FIFO's move 2 A/D samples per transfer
- Pre/post-trigger, gap-free, ring buffering

Fax Code 40010

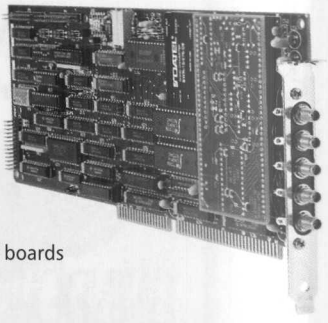


High-Performance Analog Input with DSP Coprocessor

PC-430 (ISA Bus) **DVME-630** (VME Bus)

- On-board TI 320C30 (40MHz) DSP; Local 32-bit DSP bus
- On-board memory - 8k samples A/D FIFO, 8k x 32 expansion RAM, 8Mb dual-port RAM
- On-board DSP library - FFT's, filters, matrix math, more

Fax Codes 42050, 43090



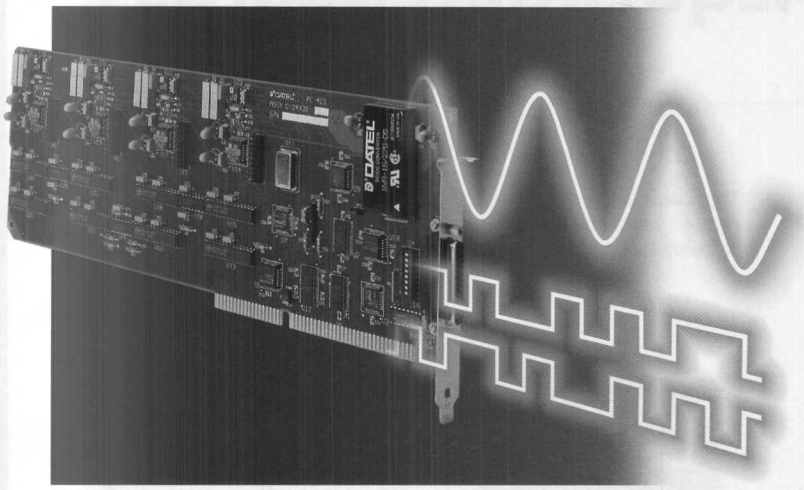
High-Speed Data Acquisition with On-Board Data Buffers

PC-414 (ISA Bus) **DVME-614** (VME Bus)

- On-board FIFO to 16k A/D samples
- Non-stop, gapless, data "streaming" to disk
- Programmable-threshold analog input trigger
- Optional COMM port adapter (14MHz) to DSP boards

Fax Codes 42020, 43030

"Non-Stop" Analog/Digital Signal Synthesis



On-board buffers liberate host for concurrent tasks

Models PC-423A/B

Avoid Windows Delays

- PC/AT (ISA) and EISA compatible
- Four, 12-bit D/A converters with update rates to 1MHz
- Four, 16-bit digital outports with update rates to 5MHz
- Four, dual-port, FIFO memories up to 8k (PC-423B) samples deep
- Non-stop waveform synthesis while new data is loaded from host
- Ideal for non-stop playback of disk files
- Programmable timer or external clock control
- Windows, Windows 95, DOS and Pentium compatible

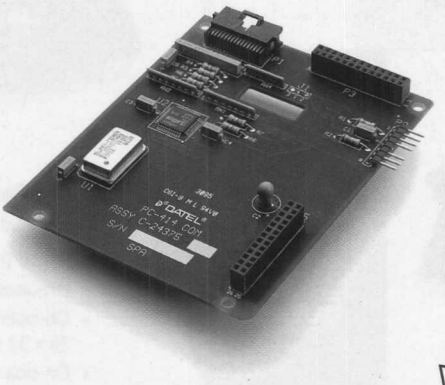
Fax Code 42045

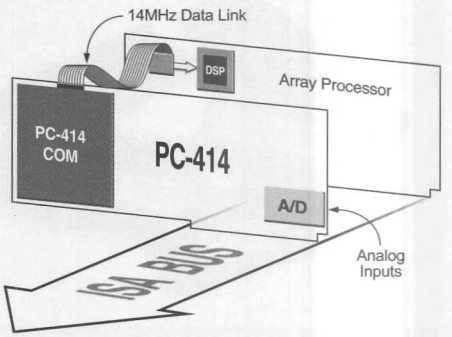
Bypass Slow ISA Bus . . . Move A/D Data Directly to Your DSP

Model PC-414COM

- Mounts directly on DATEL's PC-414 High-Performance Data Acquisition Boards
- Connects directly to third-party DSP array-processor boards
- Pin compatible with TI 320C40 COMM ports
- 14Mb/sec. transfers without loading host bus
- 7 megasamples/sec. transfer rates for 12/14/16-bit A/D converters
- Full range of options on PC-414 A/D Board:
  - 12/14/16-bit A/D resolution
  - Sampling rates to 10MHz
  - 2-16 Simultaneous A/D's

Fax Code 42025





New Windows NT Software

Configure a high-speed, continuously "streaming", A/D-to-memory recording system

- For PC-414 and PCI-416 Data Acquisition Boards
- Uses true device drivers and DLL's - ideal for programmers
- Full source code can be integrated into other applications
- Embedded assembly functions deliver high performance - non-stop streaming, ring buffers, on-the-fly markers, etc.
- Written in Borland C++
- Highly portable ... Heavily commented ... Fully supported!

DATEL, Inc., 11 Cabot Boulevard, Mansfield, MA 02048-1151 (U.S.A.)
Telephone: 508-339-3000 Fax: 508-339-6356 Email: datellit@mcimail.com

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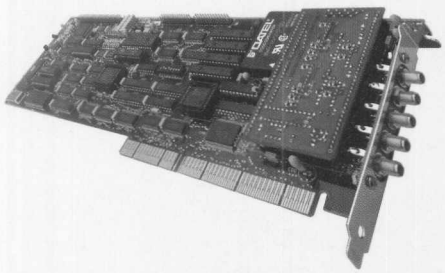
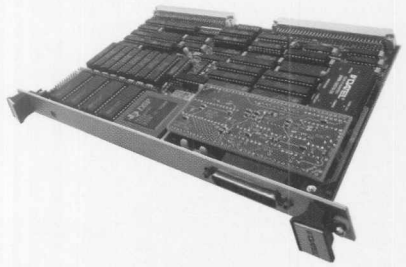
Product Line Summary



PCI, PC/ISA, EISA

- A/D resolutions to 16 bits
- Sampling rates to 10MHz
- On-board A/D FIFO memory for gapless data "streaming" to disk or memory with no lost samples
- 2 to 16-channel, high-speed, simultaneous sampling (1 A/D per channel) for signal phase de-skewing
- Very low harmonic distortion and wide input bandwidth
- DOS, Windows, Windows 95 and Windows NT software
- National Instruments LabVIEW® virtual instrument drivers

	Model	Channels	Speed	Resolution	Data Memory	Notes	Fax Code
Analog Input	PC-411/412 Series	16SE/8D A/D	To 83kHz	12/14/16 bits	512 samples	4 simultaneous D/A (PC-412), DMA, interrupt, digital I/O.	42010
	PC-414 Series	16SE/8D A/D	To 10MHz	12/14/16 bits	16k samples	2-16 channel simultaneous sampling, streaming design.	42020
	PC-430 Series	16SE/8D A/D	To 10MHz	12/14/16 bits	To 4M samples	320C30 DSP, "no programming" library, 512kb SRAM.	42050
	PC-440	32SE or 16D Input Channel Expander slave board - cascadable to 256 channels. MUX, signal conditioner, PGA.					42070
	PC-415 Series	16SE/8D A/D	To 10MHz	12/14/16 bits	8k samples	32-bit EISA bus, non-bus port for streaming to slave memory.	41010
	PCI-416 Series	16SE/8D A/D	To 10MHz	12/14/16 bits	8k samples	32-bit PCI bus, bus master, streaming design.	40010
Analog Output and Special Functions (PC/ISA)	MEM-30/30B	1 or 4 megabyte, high-speed A/D expansion memory for PC-430 or DVME-630					43150
	PC-422A/B	8/16 D/A	330kHz	12 bits	None	16-channel simultaneous update, programmable timer/interrupt.	42040
	PC-462	4 D/A, 4 A/D	Programmable Power Supply board. Isolated outputs: ± 6V @ 1A, ± 20.5V @ 250mA.				42080
	PC-420	2-channel, 40MHz Arbitrary Waveform Generator board, 64ks waveform memory, 8 filters. Windows virtual instrument.					42030
	PC-440	32SE or 16D Input Channel Expander slave board - cascadable to 256 channels. MUX, signal conditioner, PGA.					42070
	PC-423A/B	4-channel, 12-bit, streaming DAC board, 4k/8k FIFO memory per channel, 1MHz update rate.					42045



VME

- A/D resolutions to 16 bits
- Sampling rates to 10MHz
- 6U VME "double height" format
- On-board A/D FIFO memory for gapless data "streaming" to disk or memory with no lost samples
- 2 to 16-channel, high-speed, simultaneous sampling (1 A/D per channel) for signal phase de-skewing
- Very low harmonic distortion and wide input bandwidth
- Ideal for DSP and FFT's

	Model	Channels	Speed	Resolution	Data Memory	Notes	Fax Code
Analog Input	DVME-611/612 Series	32SE/16D A/D	To 400kHz	12/14/16 bits	None	Expandable to 160 channels. Software gain amplifier.	43010
	DVME-613 Series	16SE/8D isolated	To 40kHz	12/14/16 bits	None	Protected inputs, digital I/O, interrupt, A/D clock.	43020
	DVME-614 Series	16SE/8D A/D	To 10MHz	12/14/16 bits	16k samples	2-16 channel simultaneous sampling, streaming design.	43030
	DVME-630 Series	16SE/8D A/D	To 10MHz	12/14/16 bits	To 4M samples	320C30 DSP, "no programming" library, SRAM to 4Mb.	43090
	DVME-641/643/645	Input MUX Channel Expanders, slave to DVME-611. Thermocouple, 8-channel simultaneous sampling.					43100
Analog Output and Special Functions	DVME-628	8 D/A	167kHz	12 bits	--	Selectable 4-20mA loops or voltage output.	43080
	DVME-626V	6 D/A	67kHz	16 bits	--	± 0.005% non-linearity.	43070
	DVME-621	4 D/A isolated	91kHz	12 bits	--	Power DAC, ± 11V @ 100mA or 160mA loops.	43040
	DVME-622	8/16 D/A	330kHz	12 bits	--	16-channel simul. update, programmable timer/interrupt.	43050
	DVME-691	Rack-mount signal conditioner screw terminator with flat cables for A/D and D/A.					43140
	DVME-660	48-line digital I/O, programmable in/out, timer, interrupt, external trigger, comparator.					43130

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Corporate Office

DATEL, Inc.
11 Cabot Boulevard
Mansfield, MA 02048-1151
Tel: 508-339-3000
Fax: 508-339-6356

International Sales Offices

DATEL GmbH
Postfach 150826
D-80045 Munchen
Germany
Tel: 89-544334-0
Fax: 89-536337

DATEL (UK) LTD.
Unit 15, Campbell Court Business Park
Campbell Road, Bramley, Tadley
Hampshire, RG26 5EG, England
Tel: (01256) 880444
Fax: (01256) 880706

DATEL S.A.R.L.
Zone d'Activities du Pas du Lac Nord
9, Rue Michael Faraday
78180 Montigny Le Bretonneux, France
Tel: 1-34-60-01-01
Fax: 1-30-58-21-30

DATEL KK
Meiji Seimei Gotanda Building, 3F
2-27-4 Nishigotanda
Shinagawa-Ku, Tokyo 141, Japan
Tel: 3-3779-1031
Fax: 3-3779-1030

Yachiyo Building, Higashikan
2-Kita 1-21, Tenjinbashi
Kita-Ku, Osaka 530, Japan
Tel: 6-354-2025
Fax: 6-354-2064

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